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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/824,897

04/15/2004

Srinivas Cheedela

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SUITE 3400

CHICAGO, IL 60661

EXAMINER

ROBERTS, JESSICA M

ART UNIT

PAPER NUMBER

2621

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05/15/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/824,897

Applicant(s)

CHEEDELA ET AL.

Examiner

JESSICA ROBERTS

Art Unit

2621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SG/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Acknowledgment of Amendments

The amendment filed on 01/28/2008 overcomes the following rejection(s)/objection(s):

The rejection of claims 3 and 5-10 under 35 U.S.C 112 second paragraph has been withdrawn in view of Applicants amendment.

Response to Arguments

Applicant's arguments with respect to claims 1-10 have been fully considered, but are not persuasive.

As to applicants argument regarding Fimoff does not teach a "pixel reconstructor operable to reconstruct pixel from macroblocks encoded in accordance with a plurality of standards".

The examiner respectfully disagrees.

The combination of Fimoff and Yuan as a whole teaches a pixel reconstructor operable to reconstruct pixels from macroblocks encoded in accordance with a plurality of standards. Fimoff teaches a method of reconstructing pixel blocks from P and B DCT coded blocks (column 6 line 50-58). Yuan, teaches a processor based system for encoding and decoding a plurality of standards for compression ([0037], [0108], and fig. 1, 4, 6, and 8).

Therefore, it is clear to the examiner that by combining the MPEG decoder of Fimoff with Yuan's teaching a plurality of standards is fully capable of reconstructing pixels from a plurality of standards, which reads upon the claimed limitation.

Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Yuan with Fimoff for providing flexibility and adaptability of the system, thus allowing for support video and audio applications of different standards and formats without significant hardware overhead, Yuan [0037].

As to applicants argument regarding one of ordinary skill in the art at the time of the invention would not find it obvious to combine the data mux of Diaz with Moons multiple registers.

The examiner respectfully disagrees.

Diaz teaches in another embodiment multiplexers can be added or reused based on preprogramming of the blocks so they can be bypassed or used based on decompression protocol to which the compressed frame is encoded to comply to, the capacity and speed of the processor, and the available memory (abstract and fig. 3)

Further, Moon teaches in the bitstream decoding apparatus, the compressed video data can be decoded within a single clock cycle to perform transmission of a high-resolution picture signal such as that used in a digital television in an efficient way.

Therefore, it would have obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Moon with Diaz to provide a more efficient decoder that increases the speed of the video decoder, bitstream decoder and the operating clock frequency, Moon (column 1 line 31-47).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Fimoff et al., US-6, 510,178 in view of Yuan et al., US-2005/0094729 A1.

6. Regarding claim 1, Fimoff teaches a decoder for decoding macroblocks, said video decoder comprising: a processor (fig. 5, decoder 100) for decoding a set of parameters, said set of parameters comprising motion vectors indicating reference pixels associated with the macroblock (abstract); a motion vector address computer for calculating addresses associated with motion vectors (column 29 line 34-49); a pixel reconstructor for reconstructing pixels from the macroblocks, the pixel reconstructor operable to reconstruct pixels from macroblocks encoded in accordance with a plurality of standards (column 6 line 50-58). However, Fimoff is silent in regards to teaching; a video request manager for fetching a block of reference pixels at the addresses calculated by the motion vector address computer. Yuan teaches a processor-based system for encoding and decoding a plurality of standards for compression ([0037], [0108] and fig. 1, 4, 6, and 6). Yuan further teaches the reference pixels are located in

frame buffer (fig. 8). The examiner notes that in order to retrieve the reference pixels from the frame buffer would necessitate the use of retrieve or call command or video request manager. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the MPEG decoder of Fimoff with Yuan teaching of a plurality of standards for providing flexibility and adaptability of the system, thus allowing for support video and audio applications of differing standards and formats without significant hardware overhead, Yuan [0037]).

Regarding claim 2, the combination of Fimoff and Yuan as a whole further teach wherein the plurality of standards comprises MPEG-2 and AVC (Yuan, Fig. 4, 6, and 8).

Regarding claim 3, the combination of Fimoff and Yuan as a whole further teaches wherein pixel reconstructor (Yuan, fig. 8, 800) comprises: a macroblock input buffer for storing the reference pixels (Yuan; fig.8, 801 frame input buffer. Further, the frame input buffer stores both past and future reference frames, which contain reference pixels); and a register for storing a portion of the reference pixel (Yuan, fig.8, 801. The frame buffer stores both past and future reference frames, which would inherently contain reference pixels).

Regarding claim 4, the combination of Fimoff and Yuan as a whole further teaches wherein the pixel reconstructor (Fimoff and Yuan, decoder) comprises; a data path for outputting another portion of the reference pixels (Yuan, discloses the reference pixels are output to the motion compensation unit, fig.8, 800. The examiner notes that the frame buffer contains the reference frames, and reference frames are composed of reference pixels. Further, the reference frames are output to the motion compensation

unit 812). More so, to output the reference pixels from the frame buffer, would necessitate the use of a data path.

7. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diaz et al., US- 5,920,353 in view of Moon US-6, 222,467.

8. Regarding claim 5, Diaz teaches a pixel reconstructor (fig. 3) for decoding macroblocks, said pixel reconstructor comprising: a macroblock input buffer (FIFO, fig. 3); a multiplexer connected to the macroblock input buffer (MUX, fig. 3). Diaz is silent in regards to a register connected to the multiplexer; and a data path connected in parallel to the register. However, Moon discloses multiple registers connected to more than one multiplexer (first-sixth registers, fig. 3 and first – second multiplexers). Further discloses by Moon is that the registers have common pathways between the registers and multiplexers (fig. 3). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the decompression device of Diaz with the teaching of Moons' multiple registers and multiplexers to provide a more efficient decoder that increases the speed of the video decoder, bitstream decoder and the operating clock frequency (Moon, column line 31-47).

Regarding claim 6, the combination of Diaz and Moon as a whole further teaches a macroblock input buffer register connected to the multiplexer (Moon, first register; fig. 3). Further Moon discloses registers first through second connected to the second multiplexer.

Regarding claim 7, the combination of Diaz and Moon as a whole further teaches another multiplexer connected to the register ((Moon, second register; fig. 3). Further Moon discloses registers first through second connected to the second multiplexer.

Regarding claim 8, the combination of Diaz and Moon as a whole further teaches a bypass path connected to the macroblock input buffer and the another multiplexer, said bypass path bypassing the multiplexer and the multiplexer input buffer register (Moon discloses where the data from the second register can either be received by either the first or second multiplexer from the variable length decoder, fig. 3).

Regarding claim 9, the combination of Diaz and Moon as a whole further teach to reconstruct pixels from macroblocks encoded in accordance to a plurality of standards (Moon discloses MPEG-1, MPEG-2, H.261, and H.263; column 6 line 5-7).

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Diaz et al., US- 5,920,353 in view of Moon US-6, 222,467 and in further view of Yuan et al., US- 2005/0094729.

10. Regarding claim 10, the combination of Diaz and Moon as a whole are silent in regards to wherein the plurality of standards comprises MPEG-2 and AVC. However, Yuan teaches this limitation (Yuan, fig. 4, 6, and 8). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Diaz and Moon with the teaching of Yuan to include the standard of AVC for maximizing flexibility and adaptability of the system, thus allowing for support for video and audio application of different standards and formats without significant hardware overhead (Yuan, [0037]).

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA ROBERTS whose telephone number is (571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jessica Roberts/
Examiner, Art Unit 2621

/Mehrdad Dastouri/
Supervisory Patent Examiner, Art Unit 2621